REMARKS

This is in response to the Office Action dated March 26, 2004.

In the rejection of some of the claims as anticipated under ¶102(b) and others as obvious under ¶103, the Examiner relied primarily upon the publication by Iehisa et al, which reference was cited in the noted application. In this regard, the Examiner cited the Type 2 CO_2 laser as shown in Figure 3(b) of Iehisa. A simple comparison of the drawing of Figure 3(b) with the drawings of the present application show vast differences in construction. See below Fig. 3(b) of Iehisa and Figs. 2 and 5 of the present application.

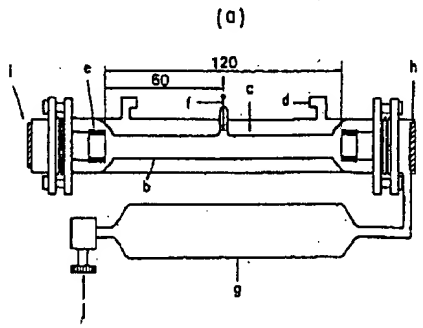

Fig. 3(b)

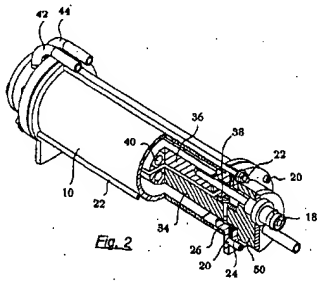

Fig. 2

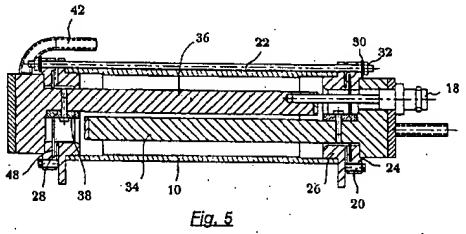

Fig. 5

For example, Figure 3(b) of Iehisa shows a relatively complex structure including the following elements:

(1) discharge tube (b),

(2) coolant Jacket (c),

(3) two axially separated cathodes (c),

(4) one radially extending anode (f),

(5) a reflector (h) located externally at one axial end of the housing, and

(6) a partial reflector (i) located externally at the opposite axial end of the housing.

By comparison the CO_2 laser of the present application in Figures 2 and 5 shows the following elements:

(1) a housing 10

(2) two electrodes 34, 36 connected to axially opposite end pieces 14 (see Figs. 2 and 5) and extending axially into the housing 10 from opposite ends and overlapping each other;

(3) two mirrors 38 fixed to the electrodes 34, 36 at opposite axial ends within the housing 10; and

(4) cooling medium bores 40 extending axially through the electrodes 34, 36.

With regard to the tube (b), the Iehisa reference describes it as having a length of 120 cm (47 inches). At the same time the two cylindrical cathodes (e) and the anode (f) were described as each having a length of 15 mm (0.6 inches). Thus the cathodes (e) and anode (f) are of a minor length compared to the tube (b). This is totally unlike the electrodes 34, 36 of the subject application which extend axially inwardly from opposite

sides for a significant portion of the length of the housing 10. At the same time the electrodes 34, 36 overlap each other.

Claims 30-33, 37-46 and 50-52 were rejected under 35 U.S.C. 102(b) as being anticipated by Iehisa et al. Claims 30-32 are independent in form while claims 33, 37-46 and 50-52 are dependent upon independent claims 30-32.

An examination of the independent claims 30-32 clearly shows that they define a structure completely different from that of Iehisa et al. Iehisa does not show electrodes overlapping each other. In this regard it can be seen that the two cathodes (e) and anode (f), which are of substantially short length, do not come close to overlapping. In addition the claims 30-32 have been amended to note that the two electrodes extend axially into the housing in the axially overlapping position. The claims 30-32 also each note that each mirror and electrode are connected together to permit separate adjustment of one electrode and mirror (as connected together) relative to the other electrode and mirror (as connected together).

Iehisa shows two cathodes (e) which are not separately adjustable relative to each other and do not have the reflector (h) and partial reflector (i) connected together with either of the two cathodes or the anode for separate relative adjustment.

The noted dependent claims define additional features which even further define over Iehisa et al.

Claims 34-36 and 47-48 were rejected under 35 U.S.C. 103(a) as obvious over Iehisa in view of Hochuli.

Here these claims are all dependent, directly or indirectly, on independent claim 32. Since, as previously noted, independent claim 32 clearly patentably defines over Iehisa

there is no way that the combination of Iehisa and Hochuli define anything close to claim 32 or the combination as defined by dependent claims 34-36 and 47-48. In this regard the cylindrical, axially spaced electrodes 15 and 16 of Hochuli do not even come close to the electrodes as defined in the noted claims. In addition, while Hochuli does suggest that the cavity length can be adjusted using piezoelectric crystals and flexible bearings, such as bellows, there is no rationale for such a modification of Iehisa.

Clearly then the rejection of the noted claims on obviousness under 103(a) is not supported and the noted claims are patentably distinct over the noted combination.

Claims 53-55 were rejected under 35 U.S.C. 103(a) as obvious over Iehisa in view of Yarborough.

Claims 53-55 are independent claims and they clearly patentably define over Iehisa for the reasons discussed above relative to independent claims 30-32. While Yarborough does teach the use of fluid carrying pipes 70 and 72 for cooling the electrodes 36, 38, it does not teach or suggest any of the elements noted in the clear distinction of the claims 30-32 over Iehisa.

Thus claims 53-55 are patentably distinct over Iehisa in view of Yarborough.

Dependent claims 56-61 are newly added. Claim 56-58 are dependent on claims 53-55 and further define the cooling means as including "cooling medium bores extending axially through said electrodes". This is substantially different than the use of the separate elements of fluid carrying pipes of Yarborough which requires a more complex assembly.

Dependent claims 59-61 add the cooling structure to independent claims 30-32.

Clearly then all of the claims patentably define over Iehisa alone or in combination with Hochuli or Yarborough.

The specification and abstract are being amended to correct formal errors and/or statements but do not in any way change the disclosure of the invention.

In view of the above it is submitted that all of the claims are patentably distinct over all of the references of record. The Examiner's favorable consideration if respectfully requested.

In this regard, in the event that the Examiner has any further questions in this matter, he is respectfully requested to contact counsel for applicant prior to issuance of any final rejection.

Respectfully submitted,

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